

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-15. (Cancelled)

16. (Currently Amended) A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

- (a) applying a contrast agent to a region of a tissue sample;
- (b) obtaining at least one reflectance signal from the region of the tissue sample within a optimal window of time, wherein the optimal window of time comprises a period of peak whitening in reflectance data or peak darkening of fluorescence of tissue begins at about 30 seconds following application of the contrast agent and ends at about 130 seconds following application of the contrast agent;
- (c) obtaining a fluorescence signal from the region of the tissue sample within the window of time; and
- (d) identifying a characteristic of the region based at least in part on the fluorescence signal and at least one of the at least one reflectance signals.

17. (Original) The method of claim 16, the method further comprising the step of obtaining a video signal from the region of the tissue sample within the window of time.

18. (Original) The method of claim 17, wherein step (d) comprises identifying a characteristic of the region based at least in part on the fluorescence signal, at least one of the at least one reflectance signals, and the video signal.

19. (Original) The method of claim 16, wherein step (b) comprises obtaining two reflectance signals from the region of the tissue sample within the window of time.

20-41. (Cancelled)

42. (Previously Presented) The method of claim 16, wherein the characteristic is a state of health.

43. (Previously Presented) The method of claim 42, wherein the state of health comprises at least one of the group consisting of normal squamous tissue, normal columnar tissue, metaplasia, immature metaplasia, mature metaplasia, CIN1, CIN2, CIN3, CIS, and cancer.

44. (Previously Presented) The method of claim 16, wherein the identifying step (d) comprises determining whether the region of the tissue sample is CIN 2+ tissue.

45. (Previously Presented) The method of claim 16, wherein the contrast agent comprises acetic acid.

46. (Previously Presented) The method of claim 16, wherein the contrast agent is selected from a group consisting of formic acid, propionic acid, butyric acid, Lugol's iodine, Shiller's iodine, methylene blue, toluidine blue, indigo carmine, indocyanine green, and fluorescein.

47. (Previously Presented) The method of claim 16, wherein the tissue sample comprises cervical tissue.

48. (Previously Presented) The method of claim 16, wherein the tissue sample comprises at least one of a group consisting of colorectal tissue, gastroesophageal tissue, urinary bladder tissue, lung tissue, and skin tissue.

49. (Previously Presented) The method of claim 16, wherein the tissue sample comprises epithelial cells.

50. (Previously Presented) The method of claim 16, wherein step (b) comprises obtaining the at least one reflectance signal from the region within a period of time that begins at about 60 seconds following application of the contrast agent and ends at about 80 seconds following application of the contrast agent.

51. (Previously Presented) The method of claim 16, wherein step (b) comprises obtaining the at least one reflectance signal from the region within a period of time that begins at about 70 seconds following application of the contrast agent and ends at about 130 seconds following application of the contrast agent.

52. (Previously Presented) The method of claim 16, wherein step (d) comprises identifying the characteristic of the region with an accuracy of at least about 70%.

53. (Previously Presented) The method of claim 16, wherein step (b) comprises obtaining a reflectance intensity from the region at each of a plurality of wavelengths within the window of time.

54. (Previously Presented) The method of claim 16, wherein step (c) comprises obtaining a fluorescence intensity from the region at each of a plurality of wavelengths within the window of time.

55. (Previously Presented) The method of claim 54, wherein step (d) further comprises obtaining a video signal from the region within the window of time.

56. (Previously Presented) The method of claim 16, wherein step (a) comprises applying a contrast agent to a plurality of regions of the tissue sample; step (b) comprises obtaining at least one reflectance signal from each of the plurality of regions within the window of time; step (c) comprises obtaining a fluorescence signal from each of the plurality of regions within the window of time; and step (d) comprises identifying a characteristic of each of the plurality of regions.

57. (Previously Presented) The method of claim 16, wherein step (d) comprises identifying a characteristic of the region based substantially on at least one optical signal, obtained within the window of time.

58. (Cancelled)